Gender Differences and the Relationship Between Academic Self Concept and Test Anxiety

Snehal Vij

Student, Mayoor School, Noida

Abstract:

This study investigates the relationship between academic self-concept and test anxiety, focusing on gender differences among university students. Academic self-concept refers to a student's perception of their academic abilities, while test anxiety encompasses the worry and nervousness experienced during exams. The research, which included 228 participants, revealed a positive correlation between academic self-concept and test anxiety, with a stronger correlation observed in female students. Additionally, female students demonstrated higher academic self-concept scores, whereas male students exhibited greater test anxiety. These findings suggest that as students' confidence in their academic abilities increases, so does their anxiety about testing, possibly due to heightened performance expectations. The study underscores the need for interventions to manage test anxiety and enhance academic self-concept, ultimately improving student outcomes and well-being.

CHAPTER 1
INTRODUCTION
1.1 Overview

Most college students evaluate themselves academically on the basis of their performance in examinations. These performance evaluations shape their perceptions, thoughts, feelings, goals, confidence and how much of an effort one puts in his/her academics. Students may evaluate their academic standing by comparing themselves to their peers or on the basis of the marks achieved or the skills acquired during the course. On the basis of these evaluations, conclusions are drawn about their academic standing. Such conclusions shape how a student may think and feel about himself/herself in an academic setting. In this day and age, competition has increased and most students are concerned with achieving good grades in examinations. During the time of examinations, many students are seen to exhibit different emotions. Some may be tense, anxious, happy, or relaxed. This has to do with their level of preparedness, expectations, anticipations and confidence. A student who is confident and prepared will be seen as calm and composed during an examination as compared to a student who is not confident and is less prepared. Thus, examinations/tests are tools of assessing how well or how poorly the student performs in the prescribed course which ultimately translates into how one sees his/herself academically.

The term academic self concept can be defined as a student's perceptions about his/her own academic performance, competence and interest in activities relevant to academics. Test anxiety can be defined as a feeling of worry and nervousness that surfaces when a student is facing a test. This topic of "Gender Differences and the Relationship between Academic Self Concept and Test Anxiety" focuses on

explaining the relationship between academic self concept and test anxiety and the differences between male students and female students with respect to the anxiety pertaining to tests, their academic self evaluation as well as it attempts to find the relationship between academic self concept and test anxiety.

1.2 Academic Self Concept

The term academic self concept is different from self concept. Self concept refers to the thoughts, perceptions and ideas an individual has about himself/herself whereas academic self concept refers to the thoughts, perceptions and ideas a student has about himself or herself in the domain of academics. Academic self-concept is the perception and evaluation that a student has or does about his or her academic abilities (Marsh & Rhonda, 2002). According to Trautwein et al. (2006), academic self-concept is referred to as a person's self-evaluation regarding specific academic domains or abilities. In other words, it is how students do school work or feel about themselves as learners (Guay, 2003; Harter, 1998). This self-concept is one of the most important variables in the academic domain, due to its significant influence on appropriate cognitive functioning (Santana, Feliciano, & Jiménez, 2009).

Academic self concept isn't just concerned with a student's perception about his/her academic standing. It is also concerned with confidence and effort. A student with a positive academic self concept will put in more effort in his studies and will be more confident about his academics. A student with a negative academic self concept will thus be less confident about his academics and will put in less effort. This may be due to how one perceives one's capabilities. Environmental factors may influence a student's academic self concept. A student who is looked down upon by his teachers and parents may be most likely to develop a negative academic self concept whereas a student with a more supportive environment will be most likely to develop a positive academic self concept. Other environmental forces such as family environment, parent approval and social perception may influence the academic self concept of the student. A conflict free family environment may help the student to concentrate on his studies as opposed to a conflict rich family environment wherein the student may find difficulty in concentrating. Parent approval can also influence the academic self concept of the student. A parent, disapproving of his child's academic choice may indulge in behaviours such as neglect and nagging as opposed to a parent who is more approving of his child's academic choices. When a student is seen as a low achiever by his/her peers, it can lead to behaviours such as excluding the student from the social group or limiting contact with the student which may ultimately translate into a negative academic self concept as compared to a student who is perceived as a high achiever.

Socio-economic factors also may have influences on a student's academic self concept. Stanley, Comello, Edwards, and Marquart (2008) did a comparative study between urban and rural school communities and found that socio economic status was a variable influencing the academic performance of the students. Srivastava and Joshi (2011) had similar findings that indicated that Academic self concept was significantly higher in schools with high facilities than in schools with low facilities.

Parents' education may also be a key factor in influencing the academic self concept of the student. Highly educated parents may be more active in reinforcing the importance of education and performance in exams whereas illiterate or less educated parents may not give importance to education per se. Like general self concept, academic self concept is subject to change from time to time. A student may have a negative academic self concept in school but may develop a positive academic self concept in college when he starts achieving good grades.

Literature available in this domain has reflected students' academic self concept changes over time but is less likely to change as students reach higher classes. Marsh (1989) suggested that academic self concept

declines in middle adolescence but increases in early adulthood. Liu and Wang (2005) had a similar finding. Their study also revealed that academic self concept tends to decrease in early and middle adolescence and also extends to adulthood.

Academic self concept is related to academic performance and achievements. A student having a positive academic self concept will have a good academic performance and a student who is a high achiever will develop a positive self concept. In his research, Ghazvini (2011) found that academic self concept and academic performance are related and academic self concept can predict the general performance of the student. Guay, Boivin and Marsh (2003) found that achievement has an effect on self concept and academic self concept has an effect on achievement.

One of the factors influencing academic self concept is motivation. Motivation refers to a drive to fulfil a need. A student who is able to keep him/herself academically motivated will have a higher chance of achieving good grades which will lead to formation of a positive self concept. Areepattamannil (2012) found that both intrinsic and extrinsic motivation play a mediational role in school self concept and school achievement for Indian immigrant students in Canada and intrinsic motivation was responsible for mediation in school self concept and school achievement in Indian students in India.

Academic self concept can influence the self esteem of the student. A student who has a positive self concept may have a positive self esteem. This means that a student who has positive perceptions and ideas about his/her academics may have a high acceptance from others, may think of himself as competent and have confidence in his own worth and abilities. Hassan et al, (2016) found that academic self concept and self esteem are positively related.

The degree of academic self concept differs from student to student. As there are individual differences in academic self concept, gender differences also exist in academic self concept. Kling et al. (1999) reported that males have higher academic self-concept than females. Jansen, Schroeders and Lüdtke (2014) reported that female students showed a lower self concept in science subjects.

1.3 Test Anxiety

The term test anxiety refers to a state of worry students tend to experience during examinations or tests. Test anxiety is defined as A diffuse feeling of worry or discomfort accompanied by negative thoughts in relation to a testing situation.(Spielberger, Gcnzalez, Taylor, Ancon, Algaze, Ross, and Westberry, 1980). Test anxiety refers to a situation-specific trait characterized by the predisposition to react with elevated anxiety in a context where performance is assessed (Hodapp, Glanzmann, & Laux, 1995). Test anxiety is the set of phenomenological, physiological, and behavioral responses that accompany concern about possible negative consequences of failure on an exam or similar evaluative situation. (Zeidner, 1998).

Test anxiety is situation specific and is different from other forms of anxiety. When a student experiences anxiety while appearing for a test or worrying about his result that state can be called as test anxiety whereas when a student feels anxious about future events such as job placements, that state can be called as anticipatory anxiety. Test anxiety can be caused due to anticipation. Anticipations can include thoughts such as "I hope the questions asked are not too difficult'', "Will I be able to achieve my desired grade " or "Will I be able to attempt all the questions" etc.

As mentioned earlier, test anxiety is a fear or worry related to testing situations. The social aspect to this is that a student may worry about the social implications of achieving poor marks in a test. In other words, a student may think that if he gets poor marks, he may lose face in front of his peers, family and teachers. This fear may further increase the level of test anxiety in the student.

Test anxiety can be a learned behaviour. According to the Behavioral School of Psychology, an individual can learn faulty patterns of behaviour. This means that test anxiety may also be learned through the process of observation. For example, a student may start experiencing test anxiety when he sees his fellow classmates asking questions to each other before the test. The sense of worry among his classmates may make him anxious about the test, thus leading him to indulge in the same behaviour as that of his classmates.

A determinant of test anxiety can be a student's examination history. A student may feel anxious about taking a test because he/she had an unpleasant experience in the past. Prior incidents such as inability to complete the test within the specified time, coming late for a test, forgetting an important document necessary for the test, being scolded by the invigilator and other such unpleasant experiences can escalate the level of test anxiety in the student.

Test anxiety can be associated with the fear of performing poorly on exams. When a student feels that he is less confident about an exam, he may start to worry about the consequences. High achieving students and low achieving students may show different levels of test anxiety. A high achieving student may be less anxious as the level of preparedness and expectancy of the result will be higher whereas a low achieving student may experience high test anxiety as the level of preparedness and expectancy of the result will be lower. Svjetlana KOLIĆ-VEHOVEC & Barbara RONČEVIĆ (2003) reported that gifted high school students reported low levels of test anxiety.

An important factor influencing test anxiety is parenting. A child whose parents are critical and less accepting of him/her may have more test anxiety than a child who has parents who are more accepting of him and warm. This means that parenting styles can influence how a child will deal with a perceived threat when being evaluated. Neerja R. Thergaonkar (2007) studied the relationship between parenting style and test anxiety. The study reported that democratic style of parenting is the most effective style in averting and improving test anxiety.

Socioeconomic status is another variable that may influence test anxiety in students. A student from a high socio economic background may have low test anxiety as compared to a student from a low socio economic background. Nutrition, lifestyle and other environmental factors can play a role in how a student perceives a testing situation. Guida and Ludlow (1989) compared socioeconomic differences in test anxiety in seventh and eighth grade students. The results of the study showed that high SES students had lower test anxiety than low SES students.

Cultural differences are very important when test anxiety is studied. Cultural differences refer to the distinct behaviours, norms and attitudes found in different cultures. This can be applied to test anxiety as well. Students from different cultures may show different levels of test anxiety. This may have to do with the differences in attitudes, beliefs and perceptions they are brought up with. Guida and Ludlow (1989) reported that South American students showed higher test anxiety than North American students. Sagar Sharma and Anup Sud (1990) reported that there are significant cultural differences in worry and emotionality components of test anxiety between Asian and Euro-American cultures.

Test anxiety can vary with age. Test anxiety can be displayed by a student of third grade as well as by a college student. There may be differences in levels of test anxiety across different age groups. A student of first grade may experience a mild form of test anxiety as he may think that if he gets a poor result, his classmates may dislike him, his parents may be unhappy and his teachers may scold him. A student in the 12th grade may be worried about how he will perform as his result will determine his career. A student in college may worry about his performance in tests as it can play an important factor when he gets

interviewed for a job. Healy (2009), reported that students of 11-18 years of age are more probable to show high levels of test anxiety than students of 18-20 years of age. This is because students at this age are subjected to family and life pressures and their lack of experience may incline them towards high levels of test anxiety.

Test anxiety is a term that is subject to individual differences. It is not necessary that two individuals will have the same amount of test anxiety. Thus some students seem to exhibit more test anxiety than others and vice versa. Just as individual differences exist in test anxiety, gender differences also tend to exist. Eman and Dogar et al (2012) reported that females reported significantly higher test anxiety than males. Ali, Mohsin and Awan (2013) also reported that female science students had a higher test anxiety than males.

CHAPTER 2
LITERATURE REVIEW

This chapter focuses on reviewing the present studies on 'Gender differences and the relationship between Academic self concept and test anxiety'. Therefore, this chapter will have studies conducted in the area of academic self concept, test anxiety, gender differences in academic self concept and gender differences in test anxiety.

2.1 Academic Self Concept and Test Anxiety

1. Test Anxiety and Academic Self-Concept of Students

Kaur and Kumaran (2016) conducted research to explore the relationship between academic self concept and test anxiety of students and to find out the differences in the academic self concept and test anxiety with some categorical variables. The objectives of the study were to (1) find out differences in Test Anxiety and Academic Self Concept with respect to gender, stream of study and academic self-appraisal, and (2) To find out the relationship between test anxiety and academic self concept. The sample size of the study was 200 university students who were selected through the method of random sampling and gender and stream of study were kept as strata. To collect data, the researchers used Academic Self Concept Scale by Liu, Wang and Parkins (2005) and Fried-Ben Test Anxiety Scale (FTAS) by Friedman and Bendas Jacob (1997). The research revealed that there were differences in test anxiety and academic self concept of students with respect to their gender, course of study and academic self-appraisal. The study also revealed a significant inverse correlation between test anxiety and academic self concept.

2. Academic self-concept, learning motivation, and test anxiety of the underestimated student.

Urhahne et al. (2011) conducted research to study the consequences of the underestimation of students' mathematical performance potential. The study was comparative in nature. The study included a sample of 235 students and 14 teachers and the population of interest was 4th grade students. To collect and analyze data, a standardized mathematical achievement test was given to the students along with a self description questionnaire. The results of the study showed that underestimated students showed equal levels of learning motivation, test performance and level of aspiration in comparison with overestimated students. As compared to overestimated students, underestimated students showed lower expectancy for success but displayed lower academic self concept and more test anxiety.

3. Perfectionism, Test Anxiety and Academic Self-Concept of Gifted High-School Students

Kolić-vehovec & Rončević (2003) conducted research to study whether intellectually gifted high school students differ from their non-gifted peers regarding academic achievement, perfectionism, test anxiety and academic self-concept, and to establish significant predictors of academic achievement. The total

sample of the study was 364 and the population of interest was second and third grade school students in Rijeka. To collect and analyze data, an intelligence test by Kulenovi and Ebec (1998), Academic Self Concept Questionnaire by Grgin and Lackovi and Test Anxiety Scale by Koli-Vehovec (1988) and an adapted version of the Multidimensional Perfectionism Scale by Frost et al. (1980) was used.

The results of the study showed that gifted high school students did not accomplish higher academic achievements than their non-gifted peers. There were no differences between those two groups regarding perfectionism and academic self-concept. However, gifted students demonstrated lower levels of test anxiety. Academically successful high school students, regardless of giftedness, endorsed higher personal standards and developed more positive general academic and scientific self-concept than less successful ones.

4. Psychological Correlates of School Bullying Victimization: Academic Self-concept, Learning Motivation and Test Anxiety

Caputo (2014) conducted a research to assess the association between students' bullying victimization at school and some psychological dimensions- academic self-concept (for both Mathematics and Reading), learning motivation (intrinsic motivation, extrinsic motivation, commitment to study) and test anxiety. The total sample size of the study was 3372 students and the population of interest was school students. Data was collected from 54 middle schools in Southern Italy through a questionnaire that contained all the above mentioned dimensions. The data contained participants of 11-14 years of age and out of total 3372 students, 51.1 % were boys and 48.9% were girls. T-test was adopted as a statistical tool for differentiating between groups of students who experienced bullying and who did not. The results of the study revealed that most of the research findings on the correlates of bullying victimization: being victim of peer bullying strongly reduces academic self-concept (both in Mathematics and Reading) and commitment to study, whilst tends to increase both extrinsic motivation and test anxiety rates, independently from gender and grade level.

2.2 Academic Self Concept

5. A comparative study on undergraduate students' academic motivation and academic self-concept.

Isikal (2010) conducted research to study the academic motivation and academic self concept of undergraduate students regarding the years that the students spent in the university. The research was cross-cultural and the objective was to compare Turkish and American undergraduate students on the basis of their academic motivation and academic self concept. The sample size of the study was 566 undergraduate university students (284 Turkish students and 282 American students). The researcher used Academic Motivation scale and Academic Self Concept scale as tools for data collection. The results of the study revealed a statistical significant effect of nationality and number of years spent in university on undergraduate students. The results also showed that Turkish students had high intrinsic motivation scores whereas the American students had higher extrinsic motivation scores. American undergraduate students had higher Academic self concept scores than Turkish undergraduate students.

6. Academic Self-Concept and Academic Achievement among University Students

Matovu (2012) conducted research to study academic self concept and academic achievement among university students. The sample size of the study was 394 university students. The data was collected from a public university in Malaysia from different levels of study and faculties. The researcher used Academic Self Concept Scale by Liu and Wang (2005) as a tool for collecting data. The researcher used MANOVA to analyze results. The results of the study revealed a statistically significant effect of gender

on academic effort and academic achievement. The results of the study also showed statistically significant differences in facilities on academic achievement.

A difference was recognized in the interaction between gender, faculties, and levels of study on academic achievement. The Post Hoc results showed that a statistically significant difference existed in between the faculties Arts and Human Sciences.

7. Mediational role of academic motivation in the association between school self-concept and school achievement among Indian adolescents in Canada and India

Areepattamannil (2012) conducted research to study the mediational role of academic motivation in the association between school self-concept and school achievement among Indian immigrant adolescents in Canada and Indian adolescents in India. The study was comparative in nature. The sample size of the study was 718 (355 Indian immigrant adolescents in Canada and 363 Indian adolescents in India) and the population of interest was high school students. Data was collected from students of Grades 9-12 in both India and Canada and academic self-concepts, academic motivation, and academic achievement were assessed. The researcher used bootstrapped tests to assess the unique ability of each mediator—intrinsic motivation, extrinsic motivation, and amotivation—to account for the effect of school self-concept on overall school GPA for Indian immigrant adolescents in Canada and Indian adolescents in India. The results for mediational analyses showed meditational roles of intrinsic and extrinsic motivation in the association between school self-concept and school achievement for Indian immigrant adolescents in Canada, while intrinsic motivation solely mediated the relations between school self-concept and school achievement for Indian adolescents in India. The results of the study also revealed that motivation was not a significant mediator for both the Indian immigrant students studying in Canada and Indian adolescents.

8. Relationships between academic self-concept and academic performance in high school students

Ghazvini (2011) conducted research to study the relationship between academic self concept and academic performance. The sample size of the study was 363 and the population of interest was high school students. The data was collected from 10 high schools and the sampling technique uses multistage cluster sampling. The researcher used his own created instrument to measure academic self concept and to assess participants' Self Concept Questionnaire (SCQ) was used and to assess scholastic performance, the researcher used the marks assigned by their teachers. The result of the study indicated that a close relationship between academic self-concept and measures of academic performance exists and academic self-concept powerfully and positively predicts general performance in literature and mathematics.

9. The Effect of School and Area on Academic Self-Concept and Academic Achievement of Adolescents

Srivastava and Joshi (2011) conducted research to study the effect of school on academic self-concept and academic achievement of adolescents and to study the effect of area on academic self-concept and academic achievement of adolescents. To collect and analyze data, Indian adaptation of Marsh Academic Self Description Questionnaire II (ASDQ) was used. The researchers also gathered data of marks achieved in the previous two years of the participants as well as their personal data sheet from school records. Multivariate Analysis of Variance (MANOVA) was employed as the statistical technique to analyze the data collected. The results of the study showed that academic achievement and academic self concept of adolescents were higher in schools with high facilities as compared to low facility schools and academic achievement was higher in urban adolescents as compared to urban adolescents.

2.3 Test Anxiety

10. Effect of test anxiety, gender and perceived self-concept on academic performance of Nigerian students.

Iroegbu and Mamasseh (2013) conducted a research to assess the effect of test anxiety, gender and perceived self concept on academic performance of Nigerian students. The sample size of the study was 190 high school students. Data was collected from senior secondary schools in Akwa Ibom State, through random sampling technique. To collect and analyse data, Test Anxiety Scale by Spielberger (1980) and Self Esteem Scale by Hudson (1982) were used. The researcher used a 2x2x2 factorial design in the study and three way analysis of variance was used to analyse unequal sample sizes. The result of the study showed that subjects with low anxiety performed better than subjects with high anxiety.

11. A Study of Test Anxiety, Self-Esteem and Academic Performance among Adolescents

Alam and Mahmood (2013) conducted research to study how test anxiety and self esteem affect academic performance. The total sample size of the study was 320 class 12th students. Data was collected through random sampling techniques from government inter colleges in Darbhanga town, India. To collect and analyze data, Test Anxiety Inventory (Spielberger et al., 1980) and the Coopersmith Self- Esteem Inventory (Coopersmith, 1987) were used along with the participants' 11th class aggregate marks. The results of the study revealed that overall low test anxiety students (boys, girls, rural and urban) had higher academic performance than high test anxiety students (boys, girls, rural and urban); had higher academic performance than high test anxiety students (boys, girls, rural and urban); there is a positive relationship between self-esteem and academic performance of the students (boys, girls, rural and urban); there is a negative relationship between test anxiety and self-esteem of students (boys, girls, rural and urban); boys have least test anxiety, better self-esteem and better academic performance than girls; and urban students have least test anxiety, better self-esteem and excellent academic performance in comparison to their rural counterparts.

12. An Investigation of the Relationship between Test Anxiety, Self Esteem and Academic Performance among Polytechnic Students in Nigeria

Akinleke (2012) conducted a study to discover how test anxiety and self esteem affect academic performance. The total sample size of the study was 250 and the parameter was final year National Diploma (NDII) students of the Federal Polytechnic, Ilaro. Data was collected through random sampling technique. The researcher administered two questionnaires on the sample and also collected their Grade Point Averages (GPAs) . The researcher then compared the GPAs with the scores obtained on the questionnaires. The results of the study showed that overall, low anxiety students had higher GPAs than high anxiety students and that there is a positive relationship between self esteem and academic performance.

2.4 GENDER DIFFERENCES IN TEST ANXIETY

13. Gender Differences in Test Anxiety and Their Impact on Higher Education Students' Academic Achievement

Isabel et al. (2016) conducted a study to examine the gender differences in test, trait, and maths anxiety among university students, as well as differences in their academic achievement. The total sample size of the study was 168 and the parameter was university students of University of Barcelona. The researcher administered measures of maths anxiety, trait anxiety and test anxiety. The participants were then asked about their expected level of anxiety when faced with four specific test situations: multiple-choice, open-question, oral presentation, and an exam involving calculations. The results of the study showed that

female students reported higher levels of test, maths, and trait anxiety, as well as greater expected anxiety in three of the four test situations considered as compared to males. The results of the study also showed that females did not show lower academic achievement than male students in either the open-question or the multiple-choice exams.

14. Gender Differences in Test Anxiety and Examination Stress

Eman et al. (2012) conducted a study to compare the level of test anxiety and examination stress among male and female university students. The total sample size of the study was 100 students which consisted of 50 males and 50 females and the parameter was university students. Data was collected from the Department of Sociology and the Department of Business Administration through purposive sampling technique. The results of the study revealed that females experienced significantly higher levels of test anxiety compared to male students.

15. Gender Differences In Terms Of Test Anxiety and Attitude towards Science

Ali, Mohsin and Awan (2013) conducted a research to assess gender differences in terms of test anxiety and attitude towards science. The total sample size of the study was 1,885 and the parameter was secondary school science students in the Punjab province of Pakistan. To collect and analyse data, Test Anxiety Inventory was used along with Test of Science-Related Attitudes. ANOVA was used as a statistical tool to analyse gender differences. The results of the study revealed that females had higher test anxiety and more positive attitude towards science than males.

16. Gender Differences in Test Anxiety and Academic Performance of Medical Students

Farooqi et al.(2012) conducted a research to investigate gender differences in test anxiety level and academic performance of medical students. The total sample of the study was 150 out of which 75 were males and 75 were females and the population of interest was medical students. The data was collected through purposive sampling technique from Services Institute of Medical Sciences (SIMS) and the age range of the population was kept from 17-24. Test Anxiety Inventory By Spielberger (1980) was administered on the participants. The results of the study showed that female medical students reported significantly higher test anxiety level as compared to the male medical students. Moreover, the results suggested that the male medical students achieved statistically significant higher GPAS as compared to the female medical students Furthermore, significant negative relationship was found between test anxiety and academic performance of medical students.

2.5 GENDER DIFFERENCES IN ACADEMIC SELF CONCEPT

17. Academic Self-Concept: A Cross –Sectional Study of Grade and Gender Differences in a Singapore Secondary School

Liu and Wang did a research on whether there is any grade or gender effect on adolescents' academic self concept in the Singapore context. The total sample size of the study was 656 students and the data was collected from a government co-educational school. The results of the study suggested a significant main effect according to grade, with Secondary 3 students having significantly lower academic self-concept (scale and subscales) than Secondary 1 and 2 students. In addition, there was a significant main effect for gender, with female students having significantly higher perceived academic effort (academic self-concept subscale) than their male counterparts.

18. Academic Self Concept, Gender and Single Sex schooling

Sullivan (2009) conducted a research to find out gender differences in academic self concept. The study was a cohort based study and based on children born in 1958. The study found that males had a higher academic self concept than females in mathematics and science whereas girls had a higher academic self

concept in English than males. The results also showed that single-sex schooling decreased the gender gap in self concept and selective schooling was linked to lower academic self concept.

CHAPTER 3
AIMS, OBJECTIVES, OPERATIONAL DEFINITIONS AND HYPOTHESES

This study is an attempt to find out the relationship between academic self concept and test anxiety in males and females as well as to find out gender differences in academic self concept and test anxiety.

3.1 AIM OF THE STUDY

The present study aims at finding out the relationship between academic self concept and test anxiety in male students and female students and to assess the gender differences in academic self concept and test anxiety.

3.2 OBJECTIVES OF THE STUDY

1. To assess the relationship between academic self concept and test anxiety in male students and females students.
2. To assess gender differences in academic self concept.
3. To assess gender differences in test anxiety.

3.3 OPERATIONAL DEFINITIONS

Academic self concept can be defined as a student's perceptions about his/her own performance, effort and confidence in the domain of academics. Test anxiety can be defined as a state of worry or nervousness, experienced by a student, that surfaces due to the anticipation of how one will perform and the consequences of the student's performance in a testing situation.

3.4 NEED OF THE STUDY

As seen in the 2nd chapter, there has been a paucity of Indian research in this area therefore this study will attempt to establish the relationship between academic self concept and test anxiety and assess gender differences in academic self concept and test anxiety. In other words, the study will attempt to find out, whether academic self concept and test anxiety have direct relationship, inverse or no relationship at all, as well as to find out if males have higher academic self concept than female students or vice versa and if male students have higher test anxiety than females or vice versa. Thus, the findings of the study can help in constructing suitable programmes in helping students with low academic self concept and high test anxiety.

3.5 HYPOTHESES

H 1 .1: There will be a positive relationship between academic self concept and test anxiety in male students.

H 1 .2: There will be a positive relationship between academic self concept and test anxiety in female students

H 1 .3: Male students will have a higher academic self concept in comparison to female students.

H 1 .4: Male students will have higher test anxiety in comparison to female students.

CHAPTER 4
METHODOLOGY
4.1 INTRODUCTION

The emphasis of this study is to investigate the relationship between academic self concept and test anxiety and to assess the gender differences in academic self concept and test anxiety. This chapter aims at

explaining the methodology used in the present research which involves explaining the research design employed in the study. The research design involves choosing the size of the sample, appropriate sampling technique, inclusion and exclusion criteria of the chosen sample, data collection process and applying suitable statistical techniques to the data

4.2 RESEARCH DESIGN

The present study attempts to explain the relationship and gender differences between academic self concept and test anxiety. For this purpose, standardised questionnaires- Academic Self Concept Scale by Liu and Wang (2005) and Test Anxiety Inventory by Spielberger (1980) were used to measure academic self concept and test anxiety. Data was collected through the above mentioned questionnaires and a quantitative method was used for analysis and exploration of the study.

4.3 SAMPLING

In this study, a sample of 126 female students and 102 male students was collected, resulting in a total sample size of 228 participants. The population of interest for the sample was university students pursuing either a graduate or a postgraduate degree. Purposive sampling technique was used to collect data for this study.

4.3.1 Inclusion Criteria

- Individuals who are pursuing a undergraduate or a postgraduate course were included in this study
- Age range of the chosen sample was 18-50 years of age.

4.3.2 Exclusion Criteria

- Individuals who fall in the age limit, but are not pursuing either undergraduate or a postgraduate course were not included in this study.

4.4 PROCEDURE

The following procedure was carried out, keeping in mind the objective of the study

- Questionnaires for measuring academic self concept and test anxiety were carefully selected, bearing in mind their reliability and validity, for a check on standardization of the tests.
- The questionnaires were then uploaded online and were sent through email.
- Instructions to filling the questionnaires were mentioned before the respondent began attempting.
- Data was collected during a period of 1 month
- After collecting the data, 80 males and 80 females (n=160) were randomly selected from a total collected sample of 228.
- Bivariate correlation was carried out to assess the relationship between academic self concept and test anxiety separately for males and females.
- Independent samples t-test was used to assess gender differences in academic self concept between males and females
- Independent samples t-test was used to assess gender differences in academic self concept between males and females.
- Results were reported and analysed using SPSS

4.5 MEASURES

4.5.1 Spielberger's Test Anxiety Inventory

 The Test Anxiety Inventory by Spielberger (1980) is a self report measure consisting of 20 items that are

divided into three subscales. The subscales are Test Anxiety-Total (TAI-T) Test Anxiety-Worry (TAI-W) and Test Anxiety-Emotionality (TAI-E). The divisions of these scales are such that 4 items measure Test Anxiety-Total (TAI-T), 8 items measure Test Anxiety-Worry (TAI-W) and 8 items measure Test Anxiety-Emotionality (TAI-E). The reliability values of alpha coefficient for subscales of original version of Test Anxiety Inventory were: 0.96 for TAI-T, 0.91 for TAI-W and 0.91 for TAI-E Discriminant validity of an individual student as unit of analysis ranged from 0.19 to 0.32 for the three scales of TAI. Discriminant validity ranged from 0.27 to 0.40 for these scales (Ali and Mohsin, 2003)

4.5.2 Liu and Wang's Academic Self-Concept Scale

Liu and Wang's Academic self concept scale was developed in 2005. It consists of two subscales: (a) academic confidence and (b) academic effort. The scale is designed in a manner that odd items represent academic confidence whereas academic effort is represented by even items. The scale has 20 items. There is a five point rating scale that ranges from strongly disagree (1) to strongly agree (5). The validity of the academic self concept scale is .795 and the reliability of the academic self concept scale is .802 (Matovu, 2015).

4.6 DATA COLLECTION

According to the research topic, "Gender Differences in Academic Self Concept and Test Anxiety", standardised questionnaires were employed for the purpose of data collection. The scales were uploaded online and sent through email.

4.7 STATISTICAL ANALYSIS

To investigate the relationship between academic self concept and test anxiety, bivariate correlation was applied separately for male students and female students. Gender differences in academic self concept were analysed using Independent samples t-test. Gender differences in test anxiety were analysed through Independent samples t-test. The above mentioned statistical techniques were applied to analyse the collected data through SPSS.

4.8 ETHICAL CONSIDERATIONS

- All the participants were allowed to have the free will or the option of withdrawing their participation from the study at any point of time.
- The data report, results, methods and procedures and publication status were not subjected to fabrication, plagiarism or deception.
- Records of research activities, such as data collection, research design, and correspondence with agencies or journals were maintained.
- All participants were assured that confidentiality and anonymity of their responses shall be used.

CHAPTER 5
RESULTS AND INTERPRETATION

In this chapter, tables are presented that provide data of the analysis that assess the relationship between academic self concept and test anxiety in male students and female students as well as to find out gender differences in academic self concept and test anxiety.

5.1 Description of the Sample

After collection of data, it was found that certain participants did not satisfy the inclusion criteria of samp-

ling. Accordingly, the respondents who did not fulfill the criteria of sampling were eliminated. On the resultant sample, the two groups were equalized through random selection and the total sample considered is 160 (80 male and 80 female students). Equal samples are found to result in more powerful and robust statistical outcomes.

Table 5.1 Bivariate Correlations of Academic Self Concept and Test Anxiety in Males and Females

Correlations				
Gender			Test Anxiety	Academic Self Concept
MALES	Test Anxiety	Pearson Correlation	1	.253[*]
		Sig. (2-tailed)		.024
		N	80	80
	Academic self Concept	Pearson Correlation	.253[*]	1
		Sig. (2-tailed)	.024	
		N	80	80
FEMALES	Test Anxiety	Pearson Correlation	1	.568[**]
		Sig. (2-tailed)		.000
		N	80	80
	Academic Self Concept	Pearson Correlation	.568[**]	1
		Sig. (2-tailed)	.000	
		N	80	80
*. Correlation is significant at the 0.05 level (2-tailed).				
**. Correlation is significant at the 0.01 level (2-tailed).				

Table 5.1 Correlation Analysis between Academic Self Concept and Test Anxiety among Male and Female Students

From Table 5.1, it is observed that correlation between Test Anxiety and Academic Self Concept among male students is .253 (r=.253, N=80; one tailed p=.012). The correlation is found to be positive and moderate. The r is significant at 0.012 level (one-tailed). This indicates that among male students the two variables, Test Anxiety and Academic Self Concept are positively correlated. That is, as the Test Anxiety increases the Academic Self Concept also increases and vice-versa, the outcome is moderate. It is more indicative of a positive trend.

Further, from Table 5.1, it is observed that correlation between Academic Self Concept and Test Anxiety among females is positive and high (r=.568, N=80; one-tailed p=<.001). The correlation is found to be positive and high. (r=.568). This indicates that among females, the two variables, Test Anxiety and Academic Self Concept are positively correlated. Here, the correlation is higher than male students and indicates a stronger correlation (strength) in these two variables. That is, as Test Anxiety increases the Academic Self Concept also increases in a positive manner.

Table 5.2 Descriptive Statistics for Test Anxiety (Showing $\bar{X}$, SD and SE)

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Test Anxiety	Males	80	35.5500	9.87120	1.10363
	Females	80	33.3375	7.69669	.86052

Table 5.2 is showing the descriptive statistics of t-test ($\overline{X}$, S and SE) in respect of male and female students on the variable of Test Anxiety. It can be observed from Table 5.2, the means of the two groups are different. Male students show higher Test Anxiety ($\overline{X}$m= 35.55; SE=1.1) in comparison to female students. ($\overline{X}$f= 33.34; SE=.86). The low SE indicates the variance within groups is very low supporting the assumption of equal within group variance.

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Test Anxiety	Equal variances assumed	5.632	.019	1.581	158	.116	2.21250	1.39946	-.55157	4.97657
	Equal variances not assumed			1.581	158	.116	2.21250	1.39946	-.55284	4.97784

Table 5.3 t-test Showing Differences between Males and Females on Test Anxiety

5.3 t-test Analysis between Male and Female Students on Test Anxiety

From Table 5.3, it is observed that t for one-tailed test is significant at p = .058 (t=1.58, df=158; one-tailed p= .058) This indicates that male students have significantly higher Test Anxiety in comparison to the females students. H.o rejected at one tailed p= .058

Table 5.4 Descriptive Statistics for Academic Self Concept(Showing $\overline{X}$, SD and SE)

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Academic Self Concept	Males	80	63.4625	7.84815	.87745
	Females	80	66.0500	6.35431	.71043

Table 5.4 is showing the pre-test indicators of t-test ($\overline{X}$, SD and SE) in respect of male students and female students on the variable of Academic Self Concept. As it can be observed from Table 5.4, that female students have higher Academic Self Concept ($\overline{X}$f= 66.05; SE= .71) in comparison to the male group ($\overline{X}$m= 63.46; SE=.88). The standard error in both males and females is low, thus supporting the assumption of equal within group variance

	Levene's Test for Equality of Variances	t-test for Equality of Means

Table 5.5 t-test Showing Differences Between Males and Females on Academic Self Concept

		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Academic Self Concept	Equal variances assumed	1.529	.218	-2.292	158	.023	-2.58750	1.12900	-4.81737	-.35763
	Equal variances not assumed			-2.292	158	.023	-2.58750	1.12900	-4.81812	-.35688

5.4 t-test ANALYSIS BETWEEN MALE AND FEMALE STUDENTS ON ACADEMIC SELF CONCEPT

From Table 5.5, it is observed that one tailed t is highly significant p=0.011. (t=2.59, df=158; one tailed p=0.011). This indicates that on the variable of Academic Self Concept, the two groups differ significantly, female students being significantly higher than male students.

CHAPTER 6
DISCUSSION
6.1 INTRODUCTION

The aim of the present study was to find out the relationship between academic self concept and test anxiety in male students and female students and to assess the gender differences in academic self concept and test anxiety. For this study, a total sample of 228 participants was collected which included graduate and post graduate students. After excluding the participants who did not meet the inclusion criteria 80 males and 80 females were randomly selected for analysis. Academic Self Concept Scale by Liu and Wang (2005) and Test Anxiety Inventory by Spielberger (1980) were used for the purpose of this study.

Academic self concept can be defined as a student's perceptions about his/her own performance, and effort in the domain of academics. Test anxiety can be defined as a state of worry or nervousness, experienced by a student, that surfaces due to the anticipation of how one will perform and the consequences of the student's performance in a testing situation.

6.2. OVERVIEW OF THE FINDINGS

6.2.1 Relationship between Academic Self Concept and Test Anxiety in Male and Female Students

The first objective of this study was to assess the relationship between academic self concept and test anxiety in male students and females students. In order to achieve this objective, the following hypotheses were formulated-$H_1.1$ there will be a positive relationship between academic self concept and test anxiety in male students, $H_1.2$ There will be a positive relationship between academic self concept and test anxiety in female students.

In order to analyze the collected data, SPSS software was used. To test the first and second hypotheses, analysis was done using a bivariate correlation method for assessing the relationship between academic self concept and test anxiety separately for males and females.

The results of the analysis showed that there was a moderately high correlation in male students between test anxiety and academic self concept (r=.253, N=80; one tailed p=.012). This indicates that among male students the two variables, Test Anxiety and Academic Self Concept are positively correlated. That is, as the Test Anxiety increases the Academic Self Concept also increases and vice-versa. The analysis also showed that there was a high correlation between test anxiety and academic self concept among female students (r=.568, N=80; one-tailed p=<.001). Here the correlation shows a positive relationship between test anxiety and academic self concept. The correlation is higher than male students and indicates a stronger strength in these two variables. That is as Test Anxiety increases the Academic Self Concept also increases in a positive manner. Thus hypotheses $H_1.1$ and $H_1.2$ support the existing data.

According to the existing literature, test anxiety and academic self concept have a negative correlation (Kaur and Kumaran, 2016; Urhanhe, 2011). However, the present study indicates that a positive correlation exists between academic self concept and test anxiety in male and female students, moderate positive relationship in male students and high positive relationship in female students.

This may be due to the reason that as an individual's academic self concept increases, he/she may become more apprehensive during or before exams as there may be a pressure from within the individual or from the environment to perform as well as the last examination or better. A student having a high academic self concept may have high standards for achievement and will thus put in more effort in academics. However, high standards for achievement can lead to worry and apprehension as the individual may think that he/she hasn't prepared well enough. Individuals with a low academic self-concept may have low test anxiety because such individuals may have a low standard for achievement and may put in less effort with regard to their academics. Such individuals may not be highly bothered about how they are performing in examinations and thus may not study well. Thus, they may experience less test anxiety.

6.2.2 Gender Differences in Academic Self Concept

The second objective of the study was to assess the gender differences in academic self concept. In order to achieve this objective, the following hypothesis was formulated- $H_1.3$. Female students will have a higher academic self concept than male students.The results of the analysis showed that one tailed t is highly significant p=0.11. (t=2.59, df=158; one tailed p=0.11). The mean score of male students ($\bar{X}m=63.46$) is higher than the mean score of female students ($\bar{X}m=66.05$), indicating that on the variable of Academic Self Concept, the two groups differ significantly, females being significantly higher than males. Thus the hypothesis $H_1.3$ supports the data.

According to the existing literature, females have a higher academic self concept than males (Liu and Wang, 2005; Sullivan; 2009). The present study is in line with the existing literature. Female students tend to put more effort in their academics than male students. They tend to focus more on submitting assignments on time and also engage in making their work look presentable. Female students focus on gaining skills and knowledge relevant to their academics and are seen to take their academic work seriously. Rosenberg and Simmons (1975) suggested that girls are more concerned about being well-liked, more affected by others' opinion of them, and more eager to avoid behaviour that elicits negative reactions. Lau and Leung (1992) suggested that compared to boys, girls are higher in their need for affection and affiliation. In their eagerness to conform to socially desirable behaviour and in their zeal in pleasing their significant others, it is not surprising that girls are more willing to put in effort with their academic work. Lau (1989) observed that girls focus on academic ability and performance, which are instrumental in gaining adult approval and praise.

6.2.3 Gender Differences in Test Anxiety

The third objective of the study was to assess the gender differences between males and females in the variable of test anxiety. In order to achieve this objective, the following hypothesis was formulated- $H_1.4$. Male students will have higher test anxiety than female students. The results of the analysis showed that t for one-tailed test is significant at p = .058 (t=1.58, df=158; one-tailed p= .058). The mean scores of male students ($\overline{X}m=35.55$) were higher than mean scores of female students ($\overline{X}m=33.34$), thus indicating that male students have significantly higher test anxiety in comparison to the female students. Thus the hypothesis $H_1.4$ supports the data.

According to the existing literature, female students show higher levels of test anxiety than males (Isabel et al., 2016 ;Eman et al, 2012; Ali, Mohsin and Awan, 2013). However the present study indicates that male students have higher test anxiety than female students. This may be so because male students generally begin their preparation days before exams instead of studying for the whole semester/year. Due to less time for studying, male students may develop apprehensions and may worry about their exams/tests which may lead to test anxiety. At undergraduate and postgraduate levels test/examination results are very important as they are the deciding factors in one's ability to get recruited in an organization. Thus, this can also induce test anxiety in male students. Male students may face high internal and family pressure to do well in tests/examinations. Thus, this pressure can lead to test anxiety in males. In metropolitan cities, there is high competition for admissions in colleges/universities. Male students may fear that due to fierce competition, they may not be able to get their desired university or college.

CHAPTER 7
CONCLUSION

The present study investigated the gender differences and relationship between academic self concept and test anxiety. The first objective was to assess the relationship between test anxiety and academic self concept in male students and female students. It was found that a positive relationship exists between test anxiety and academic self concept. The results of the analysis showed that there was a moderately high correlation in male students between test anxiety and academic self concept (r=.253, N=80; one tailed p=.012) and there was a high correlation between test anxiety and academic self concept among female students (r=.568, N=80; one-tailed p=<.001). The second objective of the study was to assess the gender differences in academic self concept. The results of the analysis showed that one tailed t is highly significant p=0.11. (t=2.59, df=158; one tailed p=0.11). The mean score of male students ($\overline{X}m=63.46$, SD=7.85) is higher than the mean score of female students ($\overline{X}m=66.05$, SD=6.35), indicating that on the variable of Academic Self Concept, the two groups differ significantly, female students being significantly higher than male students. The third objective of the study was to assess the gender differences in test anxiety. The results of the analysis showed that t for one-tailed test is significant at p=.058 (t=1.58, df=158; one-tailed p= .058). The mean scores of male students ($\overline{X}m=35.55$, SD=9.87) were higher than mean scores of female students ($\overline{X}m=33.34$, SD=7.69), thus indicating that male students have significantly higher test anxiety in comparison to the female students. In conclusion, hypothesis $H_1.1$, $H_1.2$, $H_1.3$ and $H_1.4$ are supported by the data.

7.1 LIMITATIONS OF THE STUDY

1. The sample in the present study only supports graduate and postgraduate students.
2. The study included students from age 18-50, thus, the results would apply to this age group only.

3. The present study has been a time based dissertation, if the study was conducted on a larger sample, the results would have been more applicable to a larger segment of population.

4. Subscales of the questionnaires were not analyzed, the focus was on the overall results.

7.2 FUTURE IMPLICATIONS

1. This study can be used as a future reference in further research.

2. This research can be extended to study male and female students of different age levels and academic backgrounds.

3. The findings of the study can be used to develop effective strategies to improve academic self concept and reduce test anxiety in students.

REFERENCES

1. Akinleke, O. W. (2012). An Investigation of the Relationship between Test Anxiety, Self Esteem and Academic Performance among Polytechnic Students in Nigeria. *International Journal of Computer Applications, 51*(1), 47-50.

2. Alam, M. M. (2014). A Study of Test Anxiety, Self-Esteem and Academic Performance Among Adolescents. *IUP Journal of Organizational Behavior, 12*(4), 33-43.

3. Ali, M. S., & Mohsin, M. N. (2013). Test Anxiety Inventory (TAI): Factor Analysis and Psychometric Properties. *IOSR Journal Of Humanities And Social Science, 8*(1), 73-81.

4. Ali, M. S., Mohsin, M. N., & Awan, A. S. (2013). Gender Differences in Terms Of Test Anxiety And Attitude Towards Science. *International Journal of Environment, Ecology, Family and Urban Studies, 3*(1), 133-138.

5. Areepattamannil, S. (2012). Mediational role of academic motivation in the association between school self-concept and school achievement among Indian adolescents in Canada and India. . *Social Psychology of Education, 15*(3), 367-386.

6. Caputo, A. (2014). Psychological Correlates of School Bullying Victimization: Academic Self-concept, Learning Motivation and Test Anxiety. *International Journal of Educational Psychology, 3*(1), 69-99.

7. Farooqi, Y. N., Ghani, R., & Spielberger, C. D. (2012). Gender Differences in Test Anxiety and Academic Performance of Medical Students. *International Journal of Psychology and Behavioral Sciences, 2*(2), 38-43.

8. Ghazvini, S. D. (2011). Relationships between academic self-concept and academic performance in high school students. *Procedia Social and Behavioral Sciences, 15*, 1034-1039.

9. Guida, F. V., & Ludlow, L. H. (1989). A Cross-Cultural Study of Test Anxiety. *Journal of Cross-Cultural Psychology, 20*(2), 178-190.

10. Hassan, A., Jami, H., & Aqeel, M. (2016). Academic Self-Concept, Self-Esteem, and Academic Achievement among Truant and Punctual Students. *Pakistan Journal of Psychological Research, 31*(1), 223-240.

11. Iroegbu, M. N. (2013). Effect of test anxiety, gender and perceived self-concept on academic performance of Nigerian students. *International Journal of Psychology and Counselling, 5*(7), 143-146.

12. Isiksal, M. (2010). A comparative study on undergraduate students' academic motivation and academic self-concept. *Span J Psychol, 13*(2), 572-585.

13. Kolić-Vehovec, S., & Zubkovic, B. R. (2003). Perfectionism, Test Anxiety and Academic Self-Concept of Gifted High-School Students. *Social Research, 12*(5), 679-702.

14. Liu, W. C., & Wang, C. K. J. (2005). Academic self-concept: A cross-sectional study of grade and gender differences in a Singapore secondary school. *Asia Pacific Educ. Rev., 6*(1), 20-27.

15. Marsh, H. W. (1989). Age and sex effects in multiple dimensions of self-concept: Preadolescence to early adulthood. *Journal of Educational Psychology, 81*(3), 417-430.

16. Matovu, M. (2012). Academic Self-Concept and Academic Achievement among University Students. *International Online Journal of Educational Sciences, 4*(1), 107-116.

17. Matovu, M. (2012). Academic Self-Concept and Academic Achievement among University Students. *International Online Journal of Educational Sciences, 4*(1), 107-116.

18. Núñez-Peñaa, M. I., Suárez-Pellicionic, M., & Bonoa, R. (2016). Gender Differences in Test Anxiety and Their Impact on Higher Education Students' Academic Achievement. *Procedia - Social and Behavioral Sciences, 228*, 154-160.

19. Sharma, S., & Sud, A. (1990). Examination Stress and Test Anxiety: A Cross-Cultural Perspective. *Psychology and Developing Societies, 2*(2), 183-201.

20. Srivastava, R., & Joshi, S. (2011). The Effect of School and Area on Academic SelfConcept and Academic Achievement of Adolescents *Delhi Psychiatry Journal, 14*(2), 331-336.

21. Sullivan, A. (2009). Academic self-concept, gender and single-sex schooling. `*British Educational Research Journal, 35*(2), 259-288.

22. Urhahne, D., Chao, S.-H., Florineth, M. L., Luttenberger, S. and Paechter, M. (2011). Academic self-concept, learning motivation, and test anxiety of the underestimated student. *British Journal of Educational Psychology, 81*, 161–177.

23. Witherspoon, D., & Ennett, S. (2011). Stability and Change in Rural Youths' Educational outcomes through the Middle and High School Years. *Journal of Youth and Adolescence, 40*(9), 1077-1090.